APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/066,147	10/26/2001	Hung T. Nguyen	01-626	3563

24319 7590 06/16/2004	EXAMINER	
LSI LOGIC CORPORATION	MEONSKE, TONIA L	
1621 BARBER LANE		
MS: D-106 LEGAL	ART UNIT	PAPER NUMBER
MILPITAS, CA 95035	2183	

DATE MAILED: 06/16/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 10/03)

-- *The MAILING DATE of this communication appears on the cover sheet with the correspondence address* --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) FROM
THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed
  after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any
  earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on <u>29 April 2004</u>.

2a)☐ This action is **FINAL**.   2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is
closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) <u>1-20</u> is/are pending in the application.

  4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) <u>1-20</u> is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on <u>26 October 2001</u> is/are: a)☐ accepted or b)☒ objected to by the Examiner.

  Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

  Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

  a)☐ All   b)☐ Some * c)☐ None of:

    1.☐ Certified copies of the priority documents have been received.

    2.☐ Certified copies of the priority documents have been received in Application No. _____.

    3.☐ Copies of the certified copies of the priority documents have been received in this National Stage
      application from the International Bureau (PCT Rule 17.2(a)).

  * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☒ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
  Paper No(s)/Mail Date _____.

4)☐ Interview Summary (PTO-413)
  Paper No(s)/Mail Date. _____ .

5)☐ Notice of Informal Patent Application (PTO-152)

6)☐ Other: _____.

DETAILED ACTION

Drawings

1. This application lacks formal drawings. The informal drawings filed in this application are acceptable for examination purposes. When the application is allowed, applicant will be required to submit new formal drawings.

Specification

2. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

Claim Objections

3. Claim 15 is objected to because of the following informality: In line 4, please change the limitation -- ; -- to -- , -- . Appropriate correction is required.

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claims 4, 11, and 18 are objected to under 35 U.S.C. 112. In claim 4, line 2, claim 11, line 2, and claim 18, lines 1 and 2, the limitation "instructions are ungrouped" is unclear. How can instructions be ungrouped when they are never grouped beforehand? For the purposes of examination, the limitation "ungrouped" will be read as "decoded". Appropriate correction is required.

Claim Rejections - 35 USC § 102

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

7. Claims 1-20 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by Witt et al., US Patent 5,651,125.

8. Referring to claim 1, Witt et al. have taught a mechanism for resource allocation in a processor, comprising:

a. categorization logic, associated with an earlier pipeline stage, that generates instruction type information for instructions to be executed in said processor (column 13, lines 19-65, column 19, lines 21-40, In the decode stage the decoder decodes and generates an instruction opcode, or instruction type, and broadcasts to all of the functional units.); and

b. priority logic, associated with a later pipeline stage, that allocates functional units of said processor to execution of said instructions based on said instruction type information (column 13, lines 19-65, column 14, lines 6-15, The reservation stations are the priority logic that allocates functional units based on the opcode, or instruction type.).

9. Referring to claim 2, Witt et al. have taught the mechanism as recited in claim 1, as described above, and wherein said categorization logic causes said instruction type information to be stored and tagged in a queue containing said instructions (column 15, lines 56-61, column 23, lines 40-52, column 24, lines 36-52, Once the categorization logic, or decoder, broadcasts the opcodes to the functional units, it causes the opcode to be stored and tagged in a reservation station queue for a functional unit.).

10.   Referring to claim 3, Witt et al. have taught the mechanism as recited in Claim l, as described above, and wherein said earlier pipeline stage is a fetch/decode stage of said processor (column 13, lines 19-65, column 19, lines 21-40).

11.   Referring to claim 4, Witt et al. have taught the mechanism as recited in Claim 1, as described above, wherein said instructions are ungrouped when said categorization logic generates said instruction type information (column 19, lines 21-40, column 13, lines 57-65).

12.   Referring to claim 5, Witt et al. have taught the method as recited in Claim 1, as described above, and wherein said instruction type information defines at least four categories of instruction (Figure 1A, Branch, ALU, Shifter, Load, Store).

13.   Referring to claim 6, Witt et al. have taught the mechanism as recited in Claim 1, as described above, and wherein said priority logic employs separate allocation schemes depending upon categories defined by said instruction type information (The instruction type information defines the allocation scheme to be employed, i.e. a shift type opcode is allocated to the shifter functional unit and a branch type opcode is allocated to the branch functional unit.).

14.   Referring to claim 7, Witt et al. have taught the mechanism as recited in Claim 1, as described above, and wherein said processor is a digital signal processor (abstract).

15.   Referring to claim 15, Witt et al. have taught a digital signal processor (DSP), comprising:

    a.   a pipeline having stages (column 5, lines 40-48, stages are inherent);

    b.   functional units coupled to said pipeline (Figure 1, elements 90, 95, 105,60, and 65);

c.   an instruction issue unit; coupled to said functional units, that wide-issues

instructions for execution in said functional units (column 15, lines 41-56, Superscalar);

d.   categorization logic, associated with an earlier stage of said pipeline, that

generates instruction type information for said instructions (column 13, lines 19-65,

column 19, lines 21-40, In the decode stage the decoder decodes and generates an

instruction opcode, or instruction type, and broadcasts to all of the functional units.); and

e.   priority logic, associated with a later stage of said pipeline, that allocates said

functional units to said execution of said instructions based on said instruction type

information (column 13, lines 19-65, column 14, lines 6-15, The reservation stations are

the priority logic that allocates functional units based on the opcode, or instruction type.).

16.   Claim 8 does not recite limitations above the claimed invention set forth in claim 1 and is

therefore rejected for the same reasons set forth in the rejection of claim 1 above.

17.   Claims 9 and 16 do not recite limitations above the claimed invention set forth in claim 2

and is therefore rejected for the same reasons set forth in the rejection of claim 2 above.

18.   Claims 10 and 17 do not recite limitations above the claimed invention set forth in claim

3 and is therefore rejected for the same reasons set forth in the rejection of claim 3 above.

19.   Claims 11 and 18 do not recite limitations above the claimed invention set forth in claim

4 and is therefore rejected for the same reasons set forth in the rejection of claim 4 above.

20.   Claims 12 and 19 do not recite limitations above the claimed invention set forth in claim

5 and is therefore rejected for the same reasons set forth in the rejection of claim 5 above.

21.   Claims 13 and 20 do not recite limitations above the claimed invention set forth in claim

6 and is therefore rejected for the same reasons set forth in the rejection of claim 6 above.

22.   Claims 14 does not recite limitations above the claimed invention set forth in claim 7 and

is therefore rejected for the same reasons set forth in the rejection of claim 7 above.

Conclusion

23.   Any inquiry concerning this communication or earlier communications from the

examiner should be directed to Tonia L Meonske whose telephone number is (703) 305-3993.

The examiner can normally be reached on Monday-Friday, 8-4:30.

24.   If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Eddie P Chan can be reached on (703) 305-9712. The fax phone number for the

organization where this application or proceeding is assigned is 703-872-9306.

25.   Information regarding the status of an application may be obtained from the Patent

Application Information Retrieval (PAIR) system. Status information for published applications

may be obtained from either Private PAIR or Public PAIR. Status information for unpublished

applications is available through Private PAIR only. For more information about the PAIR

system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR

system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

tlm

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